Do the Japanese capital markets respond to the publication of corporate social responsibility reports?

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As of November 2010, Japan was recorded as the third largest country in the number of CSR reports registered on Global Reporting Initiatives (GRI) website. This paper attempts to examine the reaction of Japan's capital market toward CSR reports by conducting an event study on 96 publication events of CSR reports. The positive value of the average abnormal returns during the event period over 2005-2010 represents a favorable reaction toward the publication of CSR reports. The statistical significance of the event study was supported by Wilcoxon's Signed-Rank Test.

Field of Research: Corporate Social Responsibility, Share Prices, Event study

1. Introduction

Information about social and environmental activities of Japanese companies is abundantly available in recent years in corporate websites as downloadable pdf-version of CSR reports. Most of the CSR reports in Japan are prepared under GRI Sustainability Reporting Guideline.

Arya and Zhang (2009) recognized that corporate efforts to accomplish CSR agendas were not futile and investors reward companies which make a commitment to comply with new CSR standards. Attempts to disclose firm's

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activities in the investing community to either attain financial benefit or to stave off potential risks are perceived worthwhile, especially if the activities are seen as of strategic nature rather than mere philanthropic (Petersen and Vredenburg, 2009). Investing in a social responsibility programs may incur expenses, but it helps maximizing the company's market value (Mackey et al. forthcoming publication).

However, there has been no previous study which examined the reaction of the capital market to the CSR report publications. This paper aims to examine market reaction toward releases of CSR reports by Japanese firms via an event analysis.

2. Literature review

2.1. Corporate social and environmental disclosure

Within legitimacy approach, disclosing voluntary activities is aimed to fulfill external interest and expectation about how businesses should be operated (Hooghiemstra, 2000). The motivation behind the disclosure is to confirm their adherence to such norms and expectation to avoid detriments of their future profitability and survival. The content of its disclosure would be either a set of information on what firm has done or a solid response to the discrediting event as an attempt to mitigate a negative impact. Thus, releasing publications in which a company can describe a variety of social and environmental activities will benefit to enhance firm's reputation. Good social reputation allows firms to improve relations with stakeholders such as employees, investors, customers, and suppliers. As such company's disclosure on social responsibility activities would be perceived as positive image by stakeholders.

Epstein and Freedman (1994) confirmed that shareholders demand companies to report ethics, employee relations, community involvement, product safety and quality, and firm's environmental activities. Information on product improvements and fair business practices are perceived as important input for institutional investors' decisions (Teoh and Shiu, 1990). The investors show interest in the companies which disclose their social and environmental attainment and have positive investment willingness to those which release CSR report (Smith et al., 2010). The use of such voluntary documents as additional information to enhance investment decision making is now possible due to the improved reliability of the documents. The self-laudatory statements are also attenuated because of the necessity of auditing and third party reviewing (Holder-Webb et al., 2009).

Under voluntary disclosure assumption, disclosure of social and environmental activities can be viewed from the capital market transaction hypothesis and the litigation cost hypothesis (Bujaki and McConomy, 2002). Capital market transaction hypothesis argued that managers provide voluntary disclosure to reduce information asymmetry between the managers and investors. Along with the reduction of information asymmetry, the cost of capital would be decreased as well. While under the litigation cost hypothesis, the threat of litigation can encourage firms to increase voluntary disclosure. Both hypotheses are consistent with theoretical research which suggests that firm will voluntary disclose information when the benefits of disclosure outweigh the associated cost.

CSR report is one of the voluntary disclosures which have important roles for reducing information asymmetry and for the functioning of an efficient capital market (Healy and Palepu, 2001). It implies that investors use the reports for evaluating how corporate managers deal with social and environmental issues. If the firm’s socially responsible activities are perceived positive an increase of firm’s stock performance may take place.

2.2. Prior studies on market reaction

Some previous event studies focused on market response toward firms’ performance in environmental activities (for examples: Jacobs et al., 2010; Lorraine et al., 2004; Takeda and Tomozawa, 2008; Klassen and McLaughin, 1996). Their studies used events related to the environmental issues, either good issues (for example the announcement of good environmental performance, inclusion into sustainability index and the attainment of environmental awards or ranking), or bad news (for example the publication of polluter list or exclusion from sustainability index). Meanwhile, others attempted to determine response of financial market to social activities of company. Their findings confirmed the existence of positive reaction of investors toward news or announcement which mean abnormal returns in firms’ stock price have been generated. However, no study has been conducted to examine market response toward the releasing of social and environmental reports by firms. This study addressed to fill the lack of knowledge about the market reaction to the publication of CSR report. Due to the different nature and characteristic between social and environmental announcement and CSR report, capital market may have a certain mode of reaction to the report publication.

3. Data and Methodology

To study market reaction to CSR reports, this paper applied an event study. The event study helps to assess the impact on the share prices caused by changes in corporate policy through the occurrence of 'abnormal' stock price effect associated with an unanticipated event (Currant and Moran, 2007). This paper investigates the occurrence of positive market reaction for the firm's stock around the time of CSR report publication. The positive market reaction means that the actual stock price exceeds the expected stock price on and around the date of issuing CSR report. 96 CSR report publications by 34 Japanese companies during 2005-2010 were examined in this study.

The event window was chosen at 19 days including the event day, 9 days before and 9 days after. The reason for choosing this window period was to allow the investing community to assimilate the reasonably dense CSR reports. Currant and Moran (2007) argued that event windows need to be larger than the specific period of interest to capture any leak in information prior to the day of the announcement, as well as to deal with late responses to the news. It is worthy to note that referring to the efficient market principle the wealth impacts of an event could be reflected in the stock price immediately and that the length of horizon should be set in a short horizon for better stock price observation (Jacobs et al., 2010).

To measure the impact of the CSR report publication on firm's share price, the study compares the actual returns of shares during the event window minus the expected returns during the same period. Daily stock price individual data for the Japanese companies were obtained from eol database. The stock returns were calculated by the growth formula. Expected returns, $E(R_{jt})$, that are compared with actual returns were calculated by using the following market model method. This model, proposed by MacKinlay (1997), describes a linear relationship between a stock return and the market return where the stock is traded.

$$E(R_{jt}) = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}$$

where:

R_{jt} = return on stock *j* on Day *t*,

R_{mt} = market return on Day *t*,

α_j=intercept of the relation for stock *j*

β_j=the slope of the relationship for stock *i* with respect to the market return

ε_{jt}=the error term for stock *j* on Day *t*

This study used daily Tokyo Stock Price Index (TOPIX) first section as the proxy of market returns. From the equation above, ε_{jt} is the portion of stock *j*'s return that cannot be explained by market movement, while $\beta_j R_{mt}$ is the portion of return attributed to market movements. This study estimates $\hat{\alpha}_j$, $\hat{\beta}_j$, using ordinary least squares regression over the estimation period of 99 trading days to compute the expected return for each sample. Estimation period started from Day -108 and ended on Day -10.

The R_{jt} and *E(Rjt)* then were input in the formula below to calculate the abnormal returns or AR_{jt} which represents abnormal return for firm *j* on day *t*.

$$AR_{jt} = R_{jt} - E\left(R_{jt}\right)$$

The abnormal return is the difference between the actual and expected return of stock individually and daily basis. Then, the mean of abnormal returns across all samples for day *t* were calculated by:

$$\overline{AR}_{jt} = \sum_{i=1}^{N} \frac{AR_{jt}}{N}$$

where N is the number of samples. To examine the abnormal return generated in day t.

In order to test the robustness of the event study Wilcoxon's Signed-Rank test was also performed on SPSS. Here the null hypothesis (H0) that there is no difference between expected returns and actual returns were tested its validity. If the test negates H0 hypothesis there are differences between actual returns and expected returns.

4. Findings and discussion

Table 1 shows the abnormal returns (AR) for each year averaged out over the specimen CSR reports from year 2005 till 2010 and their average (AAR) over the period. Whilst the ARs in each year may or may not show apparent positive abnormal returns the AARs are positive except for a day before the event (Day -1) and the event day (Day 0).

The event study supported by Wilcoxon's Signed-Rank Test confirms that Japanese financial markets show the appreciation to the publication of CSR reports by the firms. The gestation time required for the CSR report to create abnormal returns in the capital market however appears to be longer than CSR related event cases. The result supports an a priori argument that firm's engagement to socially responsible agenda can gradually enhance shareholders value over a long term. It is worthy to point out however that the stock market does not show appreciation to the firm's social and environmental activities disclosure immediately after the report is released. Moreover the abnormal return amount in AAR after the event day steadily increases as the days pass.

It is also observed from the result that the positive abnormal returns are more evident as the year progresses from 2005 toward current with an exception of 2010. The negative abnormal returns in 2010 are however small in absolute terms. Therefore it may be possible to conclude that the capital market in Japan is progressively more positive toward CSR Report publications in recent years.

Table 1 Abnormal Returns Year by Year and Average Abnormal Returns (AAR) over 2005-2010

Year	2005	2006	2007	2008	2009	2010	AAR
-9	-0.005	0.003	-0.001	0.420	0.396	-0.012	0.104
-8	-0.001	-0.003	-0.006	0.358	0.370	-0.001	0.087
-7	-0.004	-0.001	0.009	0.304	0.316	0.016	0.077
-6	0.013	-0.006	0.004	0.255	0.268	-0.028	0.066
-5	0.004	0.001	-0.002	0.233	0.230	0.122	0.059
-4	-0.015	0.001	0.001	0.188	0.183	0.011	0.044
-3	0.001	-0.005	-0.001	0.134	0.125	-0.002	0.032
-2	-0.001	-0.006	-0.003	0.083	0.095	-0.004	0.018
-1	-0.003	0.000	-0.004	-0.007	0.001	-0.004	-0.003
0	-0.003	0.007	-0.016	-0.013	-0.004	0.010	-0.006
+1	0.003	0.004	-0.005	0.002	-0.002	-0.001	0.001
+2	-0.003	-0.001	-0.001	0.099	0.082	-0.004	0.024
+3	-0.008	0.005	0.005	0.130	0.132	0.001	0.033
+4	0.007	-0.001	-0.012	0.193	0.178	-0.001	0.047
+5	-0.007	-0.002	-0.010	0.224	0.592	0.005	0.051
+6	0.001	0.009	0.002	0.289	0.235	0.003	0.075
+7	0.005	-0.003	-0.001	0.325	0.314	-0.003	0.079
+8	-0.002	-0.002	-0.001	0.366	0.361	-0.003	0.087
+9	0.009	-0.003	0.001	0.002	0.402	0.004	0.102

The following Table 2 and 3 are results of Wilcoxon's Signed-Rank Test. The results indicate that for two tailed test the null hypothesis(H0) should be rejected since the z value is -3.181 and well outside the acceptable range ($-1.96 \le z \le 1.96$ for the level of significance equals to 0.05). Therefore the positive returns shown in the event study above can be statistically endorsed.

Table 2 Ranks of the Wilcoxon's Signed-Rank Test

		N	Mean Rank	Sum of Ranks
Actual Returns –Expected Returns	Negative Ranks[a]	975	945.96	922,312
	Positive Ranks[b]	868	895.09	776,934
	Ties[c]	0		
	Total	1,843		

a: Actual Returns < Expected Returns

b: Actual Returns > Expected Returns

c: Actual Returns = Expected Returns

Table 3 Test Statistics for Wilcoxon's Signed-Rank Test

	Actual Returns –Expected Returns
Z	-3.181[a]
Asymp. Sig. (2-tailed)	0.001

a: based on positive ranks

The CSR report has different nature from other social and environmental announcements. The reports are released annually by the firms as stand-alone reports independent from the annual financial reports. It is common that annual publication may elicit in advance responses. Following Teoh and Shiu's conclusion (1990) that investors use the firm's social disclosure on their investment decision, they might anticipate the issuance although in fact firms do not consistently publish the CSR reports on a given date each year.

The adoption of reporting guidelines allows the reports contain many pages to cover wide explanation about firm's activities related to various stakeholders. In Japan, Nippon Keidanren as an influential business association has released the Corporate Social Responsibility Matrix which provides a guide line to Japanese companies to comply with social and environmental issues. Consequently CSR reports tend to be long and investors may need longer time to examine firm's attainment on social and environmental agenda.

CSR Reports contain variety of statements related to different stakeholders and it may evoke a variety of responses among investors who have different backgrounds and interests as well. It may give rise to either good or bad evaluation of social and environmental activities by the investors and hence mixed reactions from the investors. This argument in part explains the fact that the influence of the CSR Report publication to firm's share price is relatively small. Hence the average abnormal returns discovered in the current study are quite small as expected.

Another contribution for the smallness of the size of abnormal returns may be explained in terms of the historical position of CSR activities in the Japanese firms. As Takeda and Tomozawa's (2008) suggested the market reaction to environmental news has particularly enhanced in Japan after 2001 when the Ministry of Environment was established and the 2002 ratification of Kyoto Protocol. The awareness of CSR activity has since improved in the Japanese firms and by the current study period starting 2005 the CSR reporting by the Japanese firms had reached a high standard and the capital market had already factored in such reports in the share prices. Therefore the changes from that position would be relatively small.

Another characteristic of CSR report is related to the release mechanism. The company may release it on its corporate website in downloadable format and/or send the hard copies to shareholders by mail. The differing time span for delivery may be one of the causes for a slow reaction by the capital market.

Findings in this study support the argument that stock markets appreciates company's attempts to behave in socially responsible manner (Arya and Zhang, 2009, Smith et al., 2010) and shareholders would perceive it as firm's efforts to reduce risks and maintain business sustainability. The shareholder's value increases as a result of firm's commitment to CSR agenda despite it may incur extra expenses. Consequently the number of firms which commit to incorporate CSR agenda on their business strategies is increasing significantly.

5. Conclusion

This paper aimed to investigate market reaction toward the publication of CSR reports in Japan. By applying event study, the paper concludes that the annual publications of CSR reports by Japanese firms are responded positively by capital market. The amount of Average Abnormal Return (AAR) after the event day steadily increases as the days pass. By the nature of CSR Report investors need long time to examine the reports. Hence, the occurrence of abnormal returns in the capital market appears to be delayed compared to other CSR related event cases such as firm's environmental award announcement. The

Wilcoxon's Signed-Rank test confirmed that the result of the event study was statistically warranted.

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